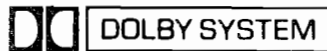


Service Manual

Radio Cassette

RQ-V162

Stereo Radio Cassette Player



Color

(K)..... Black Type

Area

Country Code	Areas	Color
[E]	Continental Europe.	(K)
[EG]	F.R. Germany/ Italy.	



■ SPECIFICATIONS

General:

Power Requirement: Battery; 3V (Two "AA" size, R6/LR6 batteries)

AC; with optional Panasonic AC adaptor RP-AC33

Power Output: 40mW (20mWx2)---RMS (max.)

Input: DC 1N; 3V (⊖ ⊕)

Output: Headphones; 20Ω, ϕ3.5

Dimensions: 87.8(W)x121(H)x34.6(D)mm

Weight: 246g without batteries

Radio Section:

Radio Frequency Range: FM 87.5~108MHz

AM 520~1610kHz

Intermediate Frequency: FM 10.7MHz

AM 459kHz

Sensitivity: FM 2.5μV/0.5mW output

(-3dB Limit, Sens)

AM: 120μV/m/0.5mW output

Tape Deck Section:

Frequency Response: 50~14,000Hz (Normal, CrO₂/Metal)

Tape Speed: 4.8cm/s

Program Time: 1 hour with C-60 cassette tape

Track System: 4-track, 2-channel, stereo playback

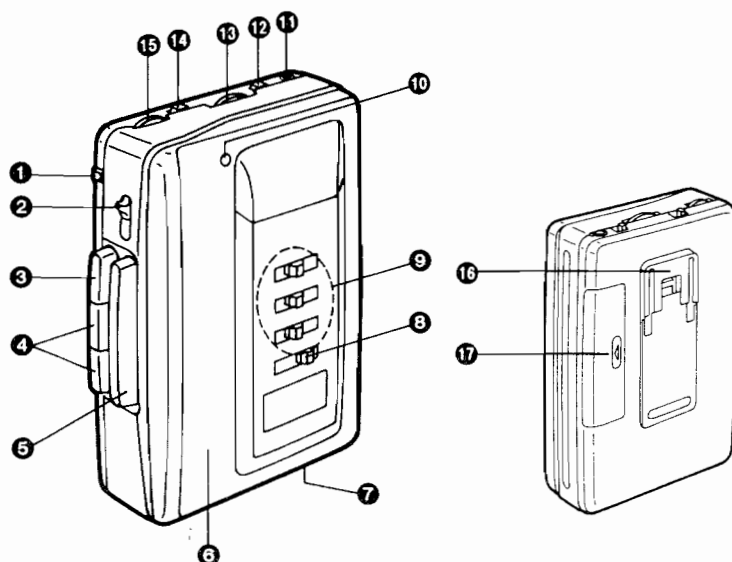
Notes:

1. Weights and dimensions shown are approximate.


2. Design and specifications are subject to change without notice.




Panasonic

LOCATION OF CONTROLS



*Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.

"DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

- ❶ **Function selector (SELECTOR) [FM/AM/TAPE OFF]**
Turn this selector to select the sound source.
- ❷ **Direction selector (DIR) [FWD/REV]**
Turn this selector to select the playback side of the tape.
- ❸ **Stop button (STOP/■)**
- ❹ **Fast buttons (FAST/◀◀ ▶▶)**
Press one of these buttons to fast forward or rewind the tape.
- ❺ **Playback button (PLAY/▶▶)**
Press this button to playback a tape.
- ❻ **Cassette compartment cover**
- ❼ **DC input jack (DC IN 3 V )**
- ❽ **XBS level control (XBS LEVEL)**
- ❾ **Graphic equalizer controls**
[300Hz/1kHz/10kHz]
- ❿ **FM stereo indicator (FM STEREO)**
- ⓫ **Headphones jack () [20Ω, φ3.5]**
- ⓬ **Dolby® noise reduction switch (DOLBY NR) [OFF/ON]**
- ⓭ **Tuning control (TUNING)**
- ⓮ **Tape/FM sensitivity selector (TAPE/FM SENS) [NOR/DX, CrO₂  /LOCAL]**
When FM broadcast reception, this is helpful for receiving FM broadcast clearly.
When tape playback, select the playback tape type. (normal, CrO₂, or Metal type)
- ⓯ **Volume control (VOLUME)**
- ⓰ **Belt clip receptacle**
- ⓱ **Battery compartment cover**

DISASSEMBLY INSTRUCTIONS

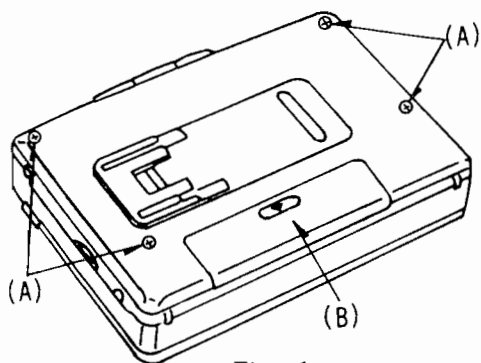


Fig. 1

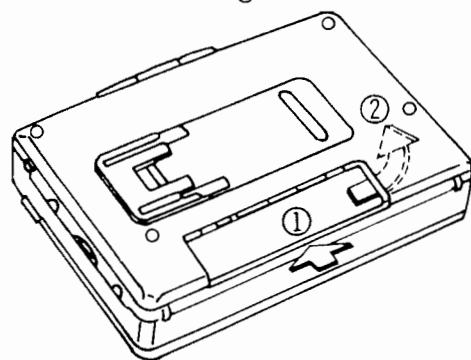


Fig. 2

● Removal of the Rear Cabinet

1. Remove the screws (A) (2×10)mm×4
2. Open the battery cover (B)×1
3. Remove the rear cabinet in the direction of arrow ① & ②.

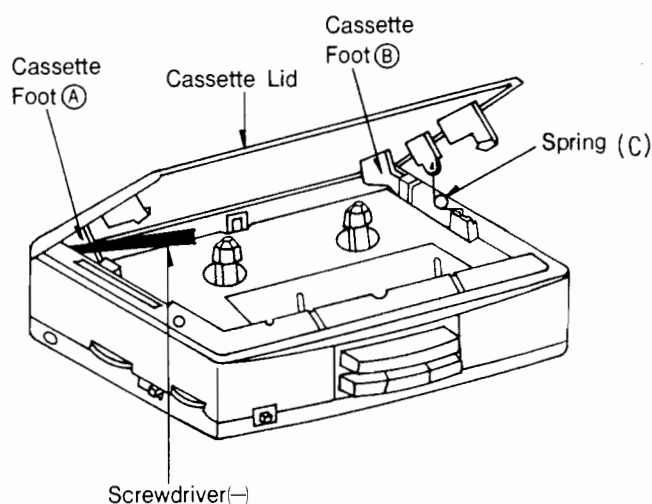


Fig. 3

● How to Removal of the Cassette Lid

Note: Be careful not to break cassette foots ① and ② when removing the cassette lid.

1. Open the cassette lid.
2. With a screwdriver, push cassette foot ① to the right as shown in Fig. 3, and then pull out the right side of the cassette lid.
3. Push cassette foot ② to the left and then pull out the cassette lid.
4. Remove the spring. (C)×1.

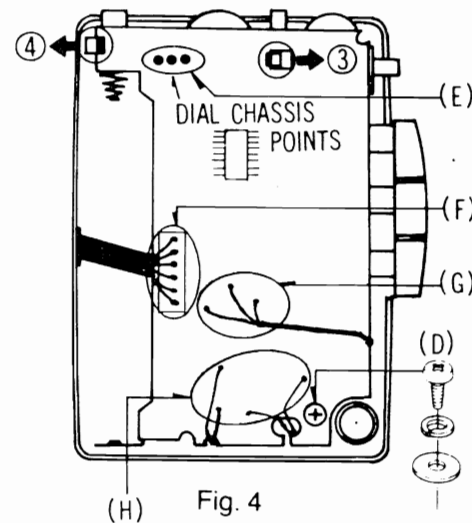


Fig. 4

● Removal of the Dial Chassis and Circuit Board (Fig. 4.).

1. Remove the chassis screw (D) (2×16)mm×1.
2. Disconnect the solder (E).
3. Remove the dial chassis in the direction of arrow ③, ④.
4. Remove the solder (F), (G), (H) from flexible P.C.B.

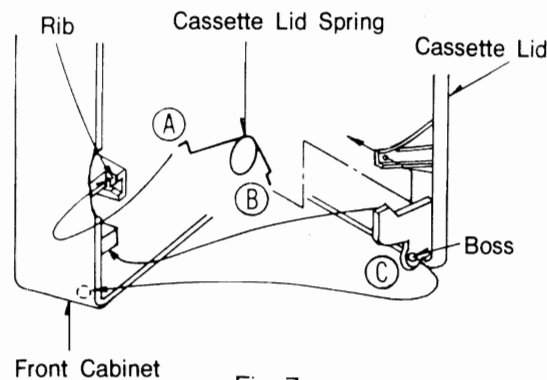
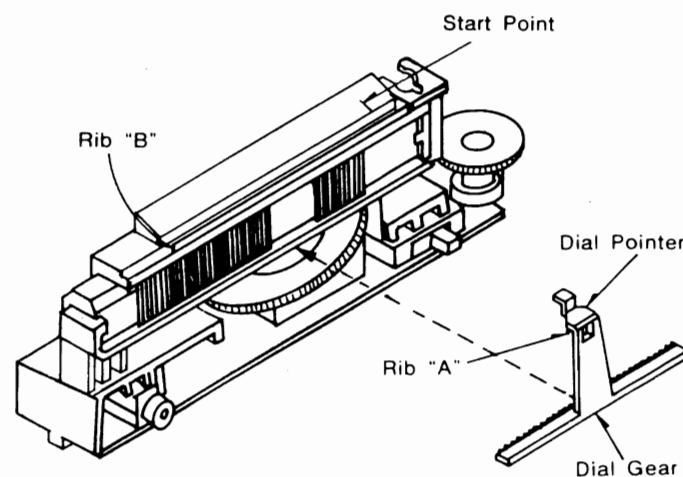


Fig. 7

● TO Removal of Tuning Gear



1. First stable turn the tuning shaft of the variable capacitor counter clockwise, to the end.
2. Second, before pointer be installed on chassis, pointer must be setted as shown.
3. Thire to in stalle pointer, inserted pointer by rib "A" to rib "B" of chassis.
4. Set the dial pointer to start point.

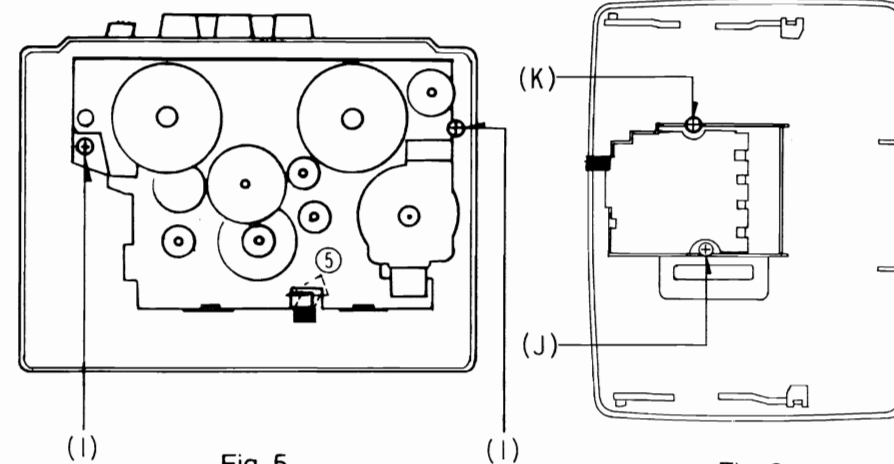


Fig. 5

● Removal of the Front Cabinet and Mechanism (Fig. 5)

1. Remove the deck screws (I) (2×6)mm×2.
2. Remove the front cabinet & mechanism in the direction of arrow ⑤.

● Removal of the Cassette Holder & Graphic Equalizer PC board. (Fig. 6)

1. Remove the screw (J) (1.4×3.5)mm×1.
2. Remove the deck screws (K) (2×6)mm×1.

Fig. 6

● How to Replace the Cassette Lid Spring (Fig. 7)

1. Fit Part (A) on the rib of the front cabinet.
2. Insert part (B) in the hole in the cassette lid.
3. Fit the boss (C) in the front cabinet.

MEASUREMENTS AND ADJUSTMENTS

● ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set volume control to maximum.
2. Set band selector switch to AM or FM.
3. Set band selector switch to radio or tape.
4. Set Tape Selector Switch to normal.
5. Set power source voltage to 3.0V DC.
6. Output of signal generator should not be higher than necessary to obtain an output reading.
7. Make sure heads are clean.
8. Make sure capstan and pinch roller are clean.



● TUNER SECTION

AM ADJUSTMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
AM-IF ALIGNMENT						
(1)	AM	Fashion a loop of several turns of wire and radiate the signal into the loop antenna of the receiver.	459kHz 30% Mod. at 400 Hz	Point of non-interference. (on/ about 600kHz)	Headphones Jack (20Ω) <div>(Fabricate the plug as shown in Fig. 3. and then connect the lead wires of the plug to the measuring instrument.)</div>	T1 (AM IFT) Adjust for maximum output.
AM-RF ALIGNMENT						
(2)	AM	"	511 kHz...[E] only 516kHz...[EG] only	Tuning capacitor fully closed.	"	L2 (AM OSC Coil) Adjust for maximum output.
(3)	AM	"	1650kHz...[E] only 1635kHz...[EG] only	Tuning capacitor fully open.	"	CT3 (AM OSC Trimmer) "
(4)	AM	"	550kHz	Tune to signal.	"	(• 1) L1 (AM ANT Coil) Adjust for maximum output. Adjust L1 by moving coil bobbin along ferrite core.
(5)	AM	"	1,500kHz	"	"	CT4 (AM ANT Trimmer) Adjust for maximum output. Repeat steps (2)~(5).
(• 1) Fix antenna coil with wax after completing alignment.						

(*1) Fix antenna coil with wax after completing alignment.

FM ALIGNMENT

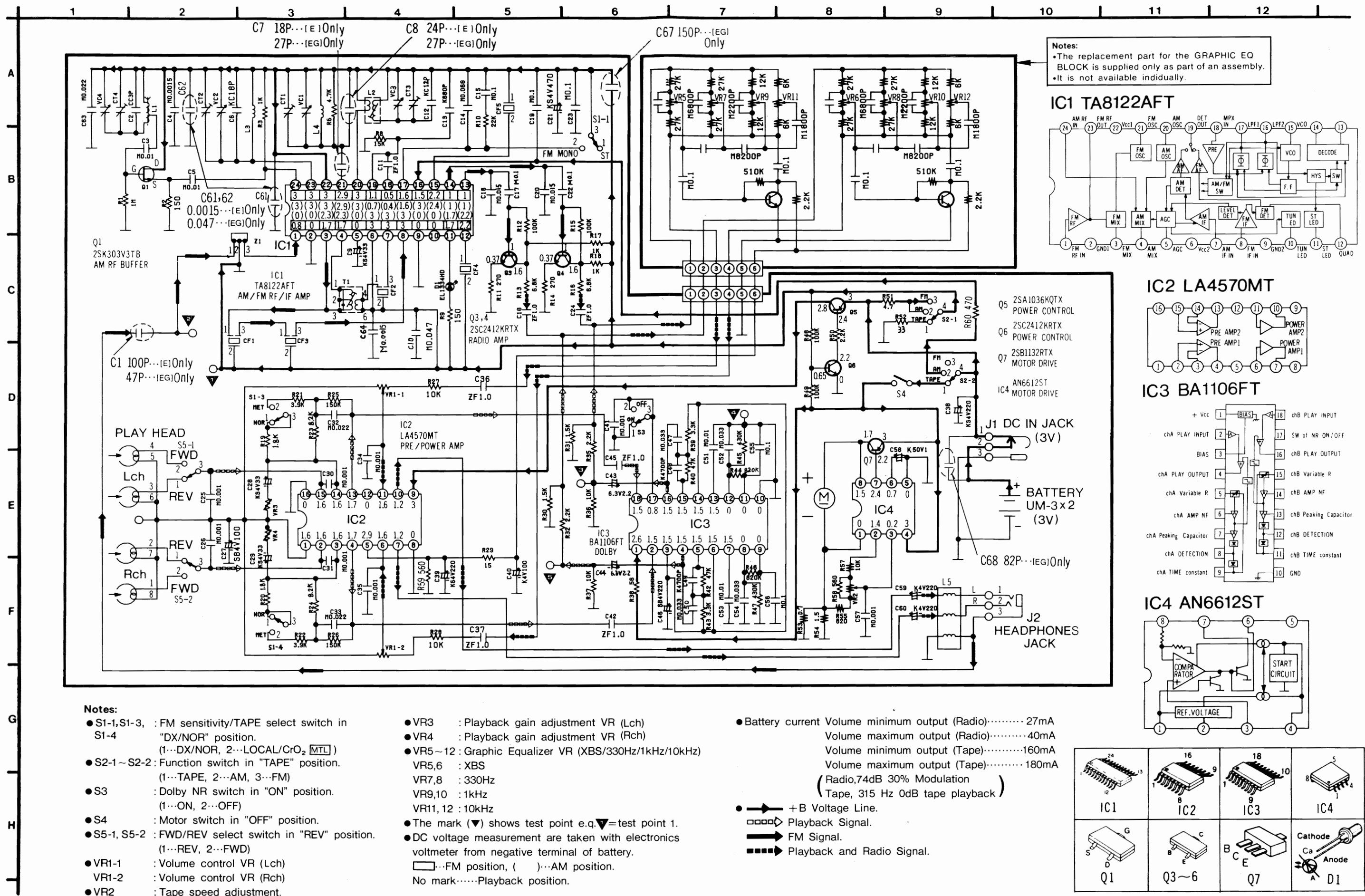
BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS	
	CONNECTIONS	FREQUENCY					
FM-RF ALIGNMENT							
(1)	FM	Connect to test point  through FM dummy antenna. Negative side to test point  .	86.2MHz...[E] only 87.4MHz...[EG] only	Variable capacitor fully closed.	Headphones Jack (20Ω) (Fabricate the plug as shown in Fig. 3. and then connect the lead wires of the plug to the measuring instrument.)	L4 (FM OSC Coil)	(* 2) Adjust for maximum output.
(2)	FM		109.3MHz...[E] only 108.35MHz...[EG] only	Variable capacitor fully open.		CT1 (FM OSC Trimmer)	"
(3)	FM		90 MHz	Tune to signal.		L3(FM ANT Coil)	"
(4)	FM		106 MHz	"		CT2 (FM ANT Trimmer)	(* 2) Adjust for maximum output. Repeat steps (3)~(6).
(* 2) Three output responses will be present; proper tuning is the center frequency.							

(*2) Three output responses will be present; proper tuning is the center frequency.

● TAPE DECK SECTION

ITEM	INPUT	MEASUREMENT POINT	ADJUSTMENT	PROCEDURE
Azimuth	QZZCFM (8kHz, -20dB)	Headphones Jack (20Ω) (Fabricate the plug as shown in Fig. 3. and then connect the lead wires of the plug to the measuring instrument.)	Azimuth adjustment screw (Refer to Fig. 2)	Adjust the azimuth adjustment screw during repeated forward and reverse playback to obtain the maximum head azimuth alignment with both channels equal. Then screw-lock the adjustment in place.
Tape speed	QZZCWAT (3kHz, -10 dB)		VR2 (Fefer to Fig. 1)	Playback the central part of the tape and adjust VR2 so that the tape speed is as follows. 3000±60Hz (Forward & Reverse)

■ SCHEMATIC DIAGRAM





■ RESISTORS & CAPACITORS PARTS LIST

T Indicates parts that are supplied by TAMACO

Ref. No.	Parts No.	Ref. No.	Parts No.
	RESISTORS		CAPACITORS
R1	ERJ6GEYJ105	C1[E]	ECUX1H101KD
R2,9	ERJ6GEYJ151	C1[EG]	ECUX1H470KCD
R3,17,18	ERJ6GEYJ102V	C2	ECUX1H030CC
R6	ERJ6GEYJ472V	C3,5,51,53	ECUX1E103MD
R8	ERJ6GEYJ153V	C4,6,7	ECUX1E152MB
R56,59	ERJ6GEYJ561V		
R10	ERJ6GEYJ223V	C6[T]	ECUX1H180KCN
R11,14	ERJ6GEYJ271V	C7[T][E]	ECUX1H180KCM
R12,15,48,	ERJ6GEYJ104V	C7[T][EG]	ECUX1H270JCD
49		C8 [T][E]	ECUX1H240JCN
R19,20	ERJ6GEYJ182V	C8[T][EG]	ECUX1H270JC
		C9,28,29	ECEA0GKS330
R13,16	ERJ6GEYJ682V	C10[T]	ECUX1C473MB
R21,22	ERJ6GEYJ392V	C11,18,24,	ECUX1C105ZFM
R23,24	ERJ6GEYJ822V	36,37,42,45,T	
R25,26	ERJ6GEYJ154V	C12[T]	ECUX1H120KCD
R27,28,36,	ERJ6GEYJ103V	C13	ECUX1H681KB
37,57		C14[T]	ECUX1C683MD
R29	ERJ6GEYJ150V	C15,19,23,	ECUX1C104MBM
R30,31	ERJ6GEYJ152V	55,56,T	
R32,35,50	ERJ6GEYJ222V	C16,20	ECUX1C153MD
R38	ERJ6GEYJ560V	C17,22,T	ECUX1C104MBM
R39,43	ERJ6GEYJ332V	C21	ECEA0GKS471I
		C25,26,30,	ECUX1H102MB
R40,42,T	ERJ8GEYJ473	31,34,35,	
R44,46	ERJ8GEYJ824	41,57,T	
R45,47,T	ERJ8GEYJ434V	C27,T	ECEA0GSB101
R51	ERJ6GEYJ4R7V	C32,33,63,T	ECUX1C223MB
R52	ERJ6GEYJ330V		
R53,T	ERSL39JR70U	C38,39	ECEA0GKS221
R54	ERJ6GEYJ1R5V	C40	ECEA0GK101
R55	ERJ6GEYJ821	C43,44,T	ECST0JA225RR
R60	ERJ6GEYJ471	C46,T	ECEA0GSB221
		C47,50,52,	ECUX1C333MB
		54,T	
		C48,49,T	ECUX1H472MB
		C58	ECEA1HK010
		C59,60	ECEA0GK221
		C61,62[E]	ECUX1H152MB
		C61,62[EG]	ECUX1C473MB
		C67[EG]	ECUX1H151K
		C68[EG]	ECUX1H820KCD
	CHIP JUMPERS		
RJ1,6	ERJ8GEYOR00V		
RJ3-5	ERJ8GEYOR00		
7-10			

BLK.....Black	ORG.....Orange
BLU.....Blue	PNK.....Pink
BRN.....Brown	RED.....Red
GRY.....Gray	SLD.....Shield Wire
GRN.....Green	VLT.....Violet
L. BLU.....Light Blue	WHT.....White
NIL.....No Color Mark	YEL.....Yellow

1. The circuit shown in () on the conductor indicates printed circuit on the back side of the printed circuit board.
2. The circuit shown in () on the conductor indicates printed circuit on the front side of the printed circuit board.
3. The symbols (●) shown in the circuit board indicate connection points between conductors on the front side and back side of the circuit board.
4. ● — ● : Chip resistor
5. ● — — — ● : Chip jumper

● This circuit board diagram may be modified at any time with the development of new technology.

MECHANISM PARTS LOCATION

ITEM	INPUT	MEASUREMENT POINT	ADJUSTMENT	PROCEDURE
Playback gain	QZZCFM (315 Hz, 0dB)	$\nabla \cdots (+)$ L-CH $\nabla \cdots (-)$ $\nabla \cdots (+)$ R-CH	VR3 (L-CH) VR4 (R-CH) (Refer to Fig. 6.)	Playback any part of the tape and adjust VR3 and VR4 so that the playback gain is $70 \pm 8\text{mV}$.

ALIGNMENT POINTS

Please refer to the Circuit Board and Wiring Connection Diagram to locate the test points.

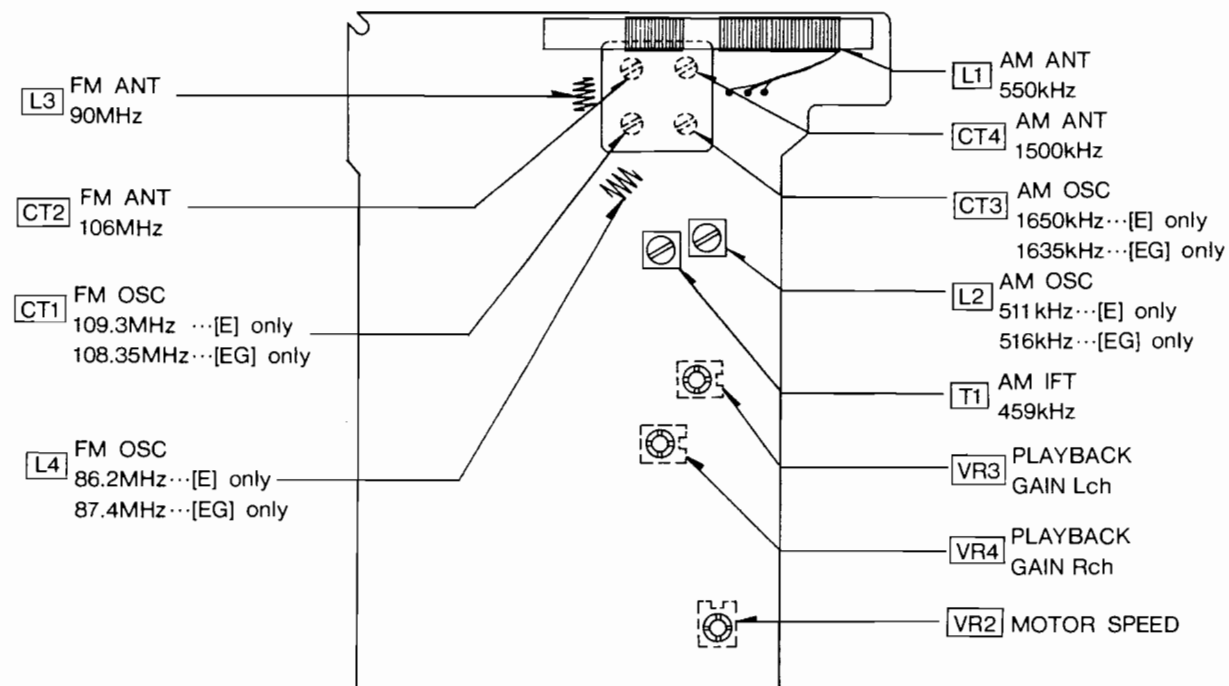


Fig. 1

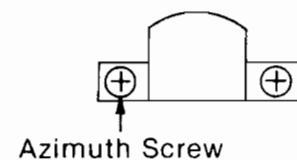


Fig. 2

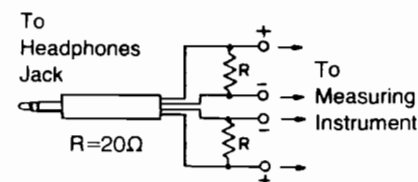
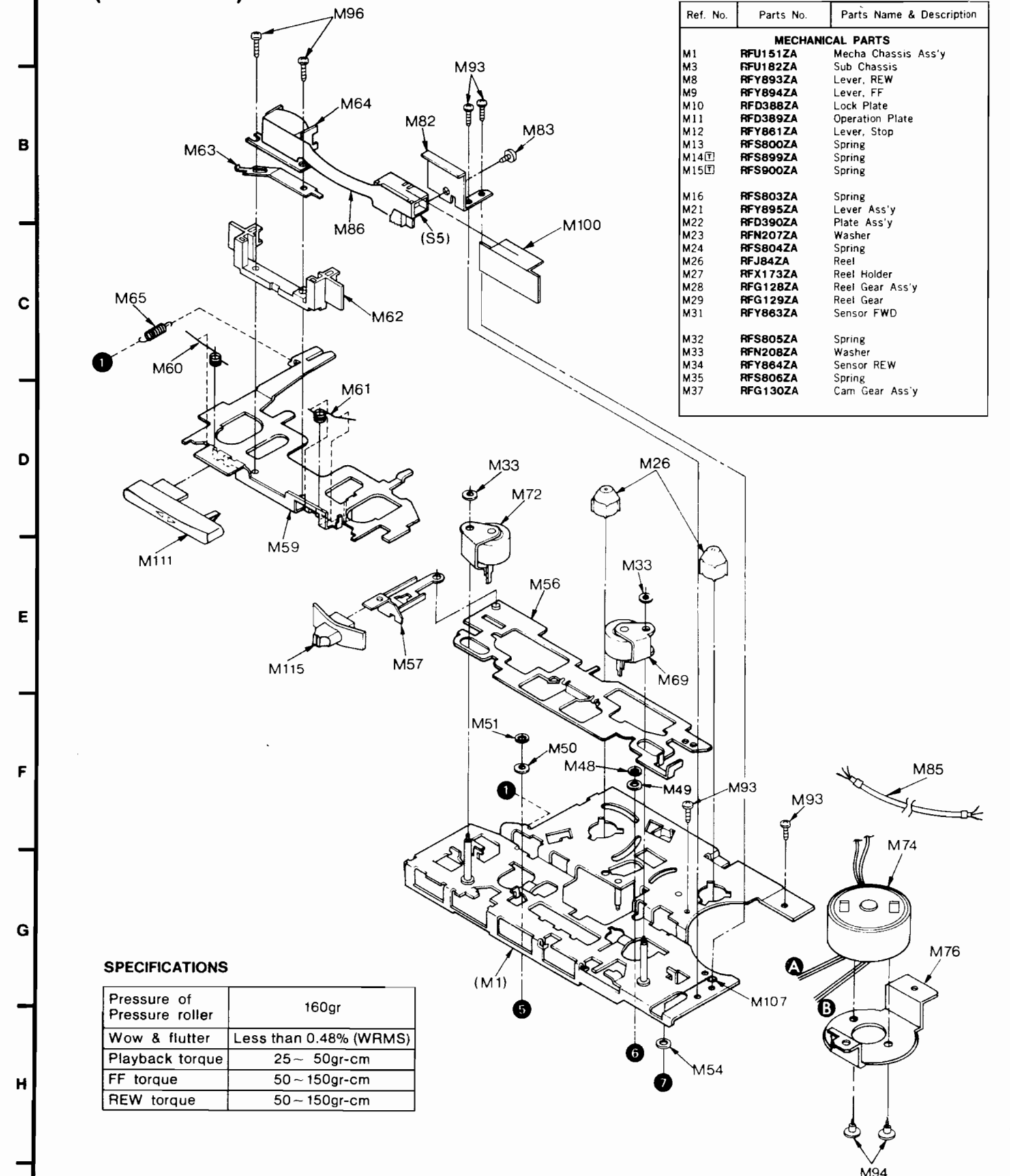


Fig. 3

(Front View)



7

8

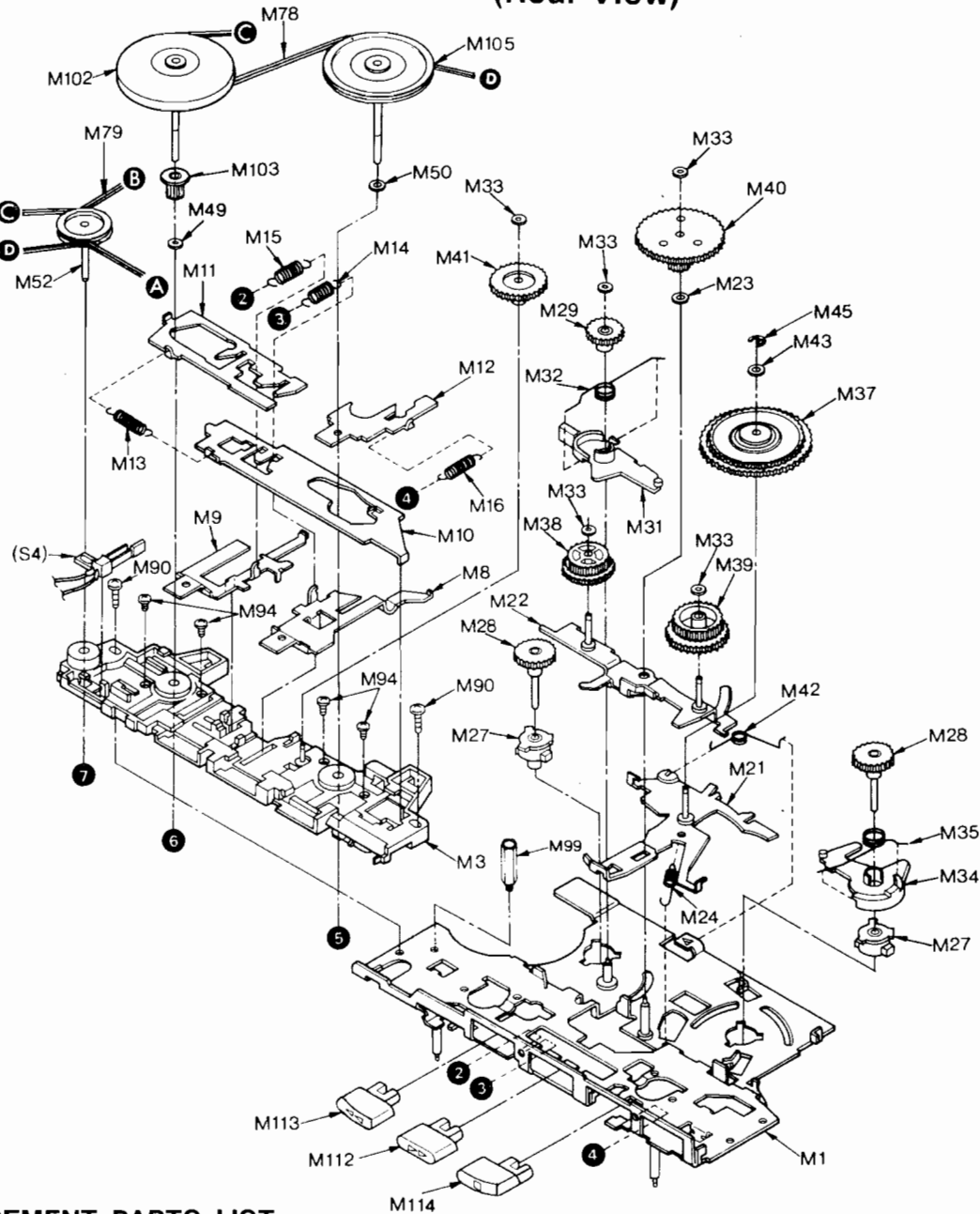
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11

12

(Rear View)

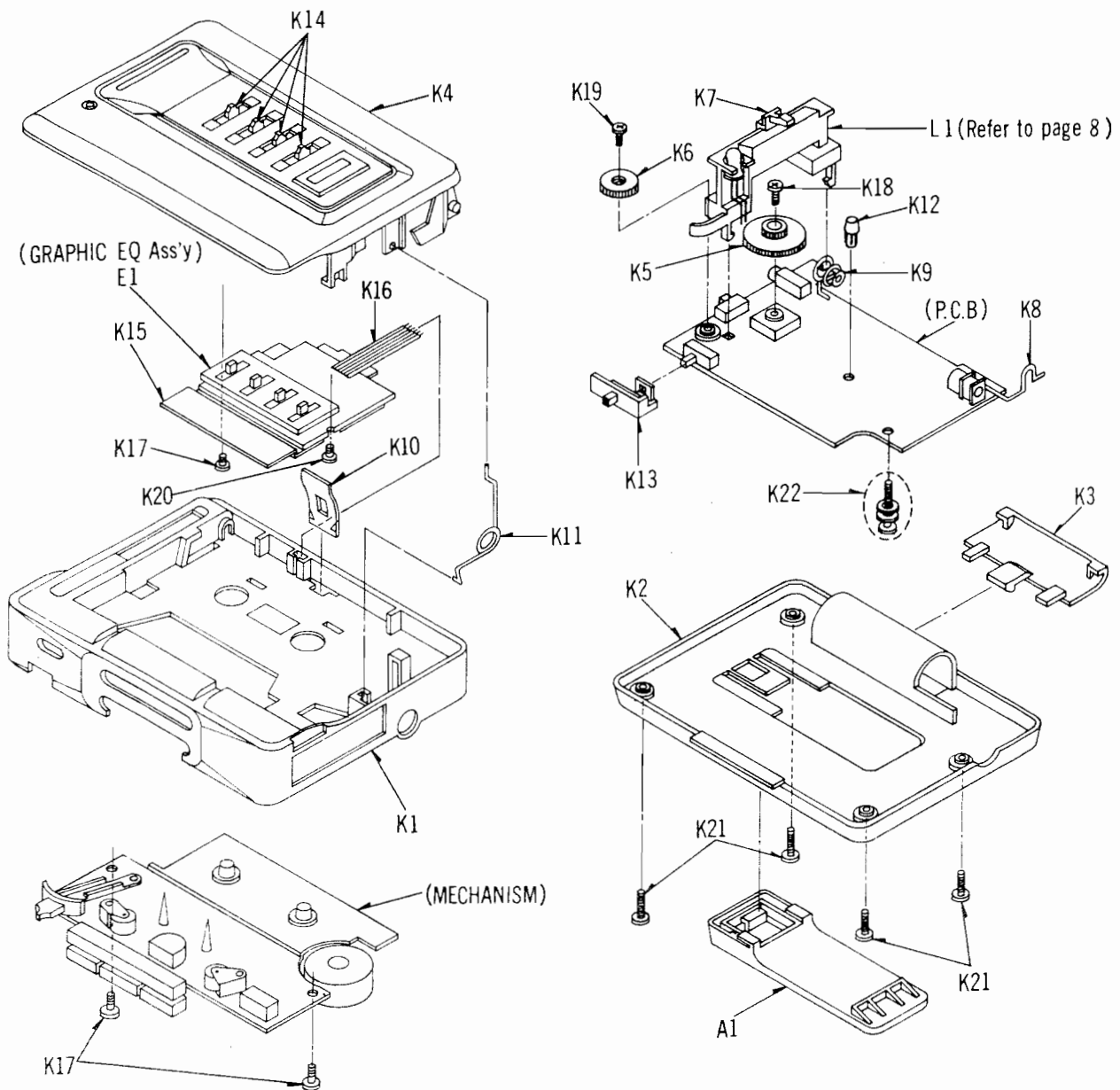


■ REPLACEMENT PARTS LIST

☐ Indicates parts that are supplied by TAMACO.

Ref. No.	Parts No.	Parts Name & Description	Ref. No.	Parts No.	Parts Name & Description	Ref. No.	Parts No.	Parts Name & Description
M38	RFG131ZA	Gear, FF	M60☐	RFS901ZA	Spring	M90	RFE492ZA	Screw
M39	RFG132ZA	Gear, REW	M61☐	RFS902ZA	Spring	M93	RFE491ZA	Screw
M40	RFG133ZA	Gear, Center A	M62	RFE489ZA	Tape Guide	M94	RFE494ZA	Screw
M41	RFG134ZA	Gear, Center B	M63	RFS810ZA	Spring	M96	RFE495ZA	Screw
M42	RFS832ZA	Spring Turn	M64☐	RBR4CM002F	Head	M99☐	RFD433ZA	Shaft
M43☐	RFE520ZA	Washer	M65	RFS811ZA	Spring	M100☐	RMC239TZA	RMC Shield
M45☐	RFE521ZA	E-Ring	M69	RFR55ZA	Pinch Roller F Ass'y	M102☐	RFF80ZA	Flywheel Ass'y
M48☐	RFN218ZA	Washer	M72	RFR56ZA	Pinch Roller R Ass'y	M103☐	RFG152ZA	Gear
M49☐	RFN220ZA	Washer	M74☐	RFM178ZA	Motor Ass'y	M105☐	RFF81ZA	Flywheel Ass'y
M50☐	RFN221ZA	Washer	M76	RFD427ZA	Motor Bracket	M107☐	RFS903ZA	Spring
M51☐	RFN219ZA	Washer	M78☐	RFB116ZA	Belt	M111☐	RBC308TZA	Button, Play
M52	RFO68ZA	Pulley, Center	M79	RFB113ZA	Belt	M112☐	RBC309TZA	Button, FF
M54	RFN215ZA	Washer	M82	RFD394ZA	SW Bracket	M113☐	RBC310TZA	Button, REW
M56	RFD391ZA	Slide Plate	M83	RFE490ZA	Screw	M114☐	RBC311TZA	Button, Stop
M57	RFY865ZA	Lever Direction	M85☐	RFE536ZA	Wire Ass'y	M115☐	RBS207TZA	Direction Knob
M59	RFU153ZA	Head Chassis	M86	RFT28ZA	F.P.C.			

CABINET PARTS LOCATION



REPLACEMENT PARTS LIST

☐ Indicates parts that are supplied by TAMACO

Ref. No.	Parts No.	Parts Name & Description	Ref. No.	Parts No.	Parts Name & Description
CABINET PARTS					
K1☐[E]	RKM284TVA	Front Cabinet	K16☐	WBE6AH	6P Wire
K1☐[EG]	RKM284TTA	Front Cabinet	K17☐	RHD003TZA	Screw
K2☐[E]	RKF269TWA71	Rear Cabinet	K18☐	XSH17+3	Screw
K2☐[EG]	RKF269TSA71	Rear Cabinet	K19☐	XSH14+4	Screw
K3☐	RKK234TZA71	Battery Cover	K20☐	XTNR14+3.5CF	Screw
K4☐	RYQQV162EKT	Cassette Cover Ass'y	K21	XTNR2+10CFZ	Screw
K5☐	RBT255TZA	Knob Tuning	K22☐	XYN17+F5FN	Screw
K6☐	RBT256TZA	Knob Volume	ACCESSORY		
K7☐	RDP247TZA	Pointer	A1☐	RKE210TZA-1	Belt Clipper
K8☐	RJC298TZA	Battery Terminal (+)	A2	RP-HT106PY	Headphones
K9☐	RJC299TZA	Battery Terminal (-)	A3☐	RQX862TZA	Instruction Manual
K10☐	RUS262TZA	Tape Spring	PACKING MATERIALS		
K11☐	RUS263TYA	Cassette Cover Spring	P1☐	RPN1471TZA	Blister (Front)
K12☐	RHR284TZA	Supporter	P2☐	RPN1472TZA	Blister (Rear)
K13☐	RBD249TYB	Tape Selector Knob	P3☐	RPK530TZA	Carton Box
K14☐	RBD244TZA	EQ Knob	P4☐	RPP424TZA	Polyethylene Cover
K15☐	RMX223TZB	EQ PVC Sheet			